

CLAIMS

What is claimed is:

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1. A display system for use in a vehicle, comprising:
  - 2 a dashboard display, positioned in front of a driver of the vehicle, and adapted to display graphic user interface elements, in a predetermined graphic composition, providing information to the driver regarding operation of devices in the vehicle; and
  - 7 a processor, coupled to receive signals from the devices in the vehicle and to drive the display responsive thereto, and to alter the graphic composition of the display responsive to a selected input to the processor.
- 1 2. A display system according to claim 1 wherein said graphic user interface elements provide information regarding at least one device selected from the group consisting of speedometer, tachometer, audio equipment, air conditioner, Internet browser, television, GPS, sun roof, windows, seat positioning, cellular telephone, fuel gauge, oil level gauge, tire pressure gauge, engine temperature gauge, brake temperature gauge, window-washer fluid gauge, and headlights.
- 1 3. A display system according to claim 1 wherein the processor is adapted to alter the graphic composition of the display by adding a graphic user interface element to the dashboard display.
- 1 4. A display system according to claim 1 wherein the processor is adapted to alter the graphic composition of the display by removing a graphic user interface element from the dashboard display.

1       5. A display system according to claim 1 wherein the  
2 processor is adapted to alter the graphic composition of  
3 the display by changing the position of a graphic user  
4 interface element on the dashboard display.

1       6. A display system according to claim 1 wherein the  
2 processor is adapted to alter the graphic composition of  
3 the display by changing the size of a graphic user  
4 interface element on the dashboard display.

1       7. A display system according to claim 1 wherein said  
2 input to the processor comprises a driver input provided by  
3 a driver of the vehicle.

1       8. A display system according to claim 7 wherein said  
2 driver input comprises a vocal input.

1       9. A display system according to claim 7 wherein said  
2 driver input comprises selection of an image, icon or  
3 button on the dashboard display, or selection of an item  
4 from a pull-down menu on the dashboard display.

1       10. A display system according to claim 7 wherein said  
2 vehicle also comprises driver-manipulable steering  
3 apparatus, said display system further comprising a  
4 selecting device mounted upon said steering apparatus, for  
5 use by a driver of the vehicle in providing said driver  
6 input.

1       11. A display system according to claim 10 wherein said  
2 selecting device comprises a pointing device.

1       12. A display system according to claim 11 wherein said  
2 pointing device is selected from the group consisting of a  
3 joystick, a thumb-button, track-point, and pressure  
4 sensitive hand-grips.

1   13. A display system according to claim 11 wherein said  
2   selecting device also comprises clickable buttons located  
3   upon said steering apparatus.

1   14. A display system according to claim 11 wherein said  
2   selecting device also comprises clickable buttons located  
3   upon said pointing device.

1   15. A display system according to claim 10 wherein said  
2   steering apparatus comprises a steering wheel.

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1   16. A display system according to claim 10 wherein said  
2   steering apparatus comprises handlebars.

1   17. A display system according to claim 10 wherein  
2   inputting said driver input to said processor does not  
3   require the driver removing a hand from the steering  
4   apparatus.

1   18. A display system according to claim 7 wherein said  
2   driver input is selected from the group consisting of a  
3   request to initiate a telephone call, a request to change  
4   the internal temperature of the vehicle, a request to  
5   utilize the GPA, and a request to adjust the audio  
6   equipment.

1   19. A display system according to claim 1 wherein said  
2   input to the processor comprises an input from a gauge of  
3   vehicle performance.

1   20. A display system according to claim 19 wherein said  
2   gauge of vehicle performance comprises a gauge selected  
3   from the group consisting of speedometer, tachometer, fuel  
4   gauge, oil level gauge, tire pressure gauge, engine  
5   temperature gauge, brake temperature gauge, window washer  
6   fluid gauge.

1 21. A display system according to claim 1 wherein said  
2 input to the processor comprises an input from a monitor of  
3 a status of vehicle components.

1 22. A display system according to claim 21 wherein said  
2 monitor of vehicle components monitors the status of a  
3 component selected from the group consisting of sun roof,  
4 windows, seat, internal rear-view mirror, external mirror,  
5 steering column, seat belt, door.

1 23. A display system according to claim 1 wherein said  
2 input to the processor comprises an input from an auxiliary  
3 device in the vehicle.

1 24. A display system according to claim 23 wherein said  
2 auxiliary device is selected from the group consisting of  
3 audio equipment, air conditioner, Internet browser,  
4 television, e-mail terminal, GPS, cellular telephone,  
5 travel log, pager and personal digital assistant (PDA).

1 25. A display system according to claim 1 wherein said  
2 input to the processor is generated responsive to an  
3 electronic signal from a source external to the vehicle.

1 26. A display system according to claim 25 wherein said  
2 external electronic signal is generated due to an event  
3 selected from the group consisting of receipt of an  
4 incoming telephone call, receipt of an e-mail message,  
5 download of a digital music recording, and receipt of a  
6 traffic alert.

1 27. A display system according to claim 1 wherein said  
2 dashboard display is personally configured for an  
3 individual driver.

1 28. A display system according to claim 27 wherein said  
2 display is personally configured responsive to an input to

3 the processor of driver preferences regarding the graphic  
4 composition of the dashboard display.

1 29. A display system according to claim 27 wherein said  
2 display is personally configured responsive to an input to  
3 the processor of driver preferences relating to operation  
4 of the dashboard display.

1 30. A display system according to claim 27 wherein said  
2 display is personally configured responsive to an input to  
3 the processor of driver preferences relating to operation  
4 of at least one device in the vehicle.

1 31. A display system according to claim 27 wherein said  
2 display is personally configured responsive to an input of  
3 driver preferences to the processor at a location remote  
4 from the vehicle.

1 32. A display system according to claim 27 wherein said  
2 display is personally configured responsive to an input of  
3 driver preferences to the processor within the vehicle.

1 33. A display system according to claim 32 wherein said  
2 input of driver preferences comprises an input to the  
3 processor while the vehicle is driving.

1 34. A display system according to claim 32 wherein said  
2 input of driver preferences comprises driver preferences  
3 learned by the processor while the vehicle is driving.

1 35. A display system according to claim 1 wherein at least  
2 one configuration of the graphic composition of the  
3 dashboard display is blocked while the vehicle is moving.

1 36. A vehicle comprising:  
2       steering apparatus;  
3       a dashboard display; and

4        a selecting device mounted on the steering apparatus  
5    for use by a driver of the vehicle in interacting with the  
6    display.

1    37. A vehicle according to claim 36 wherein said selecting  
2    device comprises a pointing device.

1    38. A vehicle according to claim 37 wherein said pointing  
2    device is selected from the group consisting of a joystick,  
3    a thumb-button, track-point, and pressure sensitive  
4    hand-grips.

1    39. A vehicle according to claim 37 wherein said selecting  
2    device also comprises clickable buttons located upon said  
3    steering apparatus.

1    40. A vehicle according to claim 37 wherein said selecting  
2    device also comprises clickable buttons located upon said  
3    pointing device.

1    41. A vehicle according to claim 36 wherein said steering  
2    apparatus comprises a steering wheel.

1    42. A vehicle according to claim 36 wherein said steering  
2    apparatus comprises handlebars.

1    43. A vehicle according to claim 36 wherein said dashboard  
2    display is adapted to display graphic user interface  
3    elements, in a predetermined graphic composition, providing  
4    information to the driver regarding operation of devices in  
5    the vehicle, and

6        wherein said vehicle also comprises a processor,  
7    coupled to receive signals from the devices in the vehicle  
8    and to drive the display responsive thereto, and to alter  
9    the graphic composition of the display responsive to a  
10   selected input to the processor.

1 44. A method for displaying information regarding  
2 operation of in-vehicle devices, comprising:

3 receiving signals from the devices;

4 displaying graphic user interface elements in a  
5 predetermined graphic composition on a dashboard display  
6 positioned in front of a driver of the vehicle, so as to  
7 provide information to a driver of the vehicle regarding  
8 operation of devices; and

9 modifying the graphic composition of the display  
10 responsive to a selected event associated with the vehicle.

1 45. A method according to claim 44 wherein said graphic  
2 user interface elements provide information regarding at  
3 least one device selected from the group consisting of  
4 speedometer, tachometer, audio equipment, air conditioner,  
5 Internet browser, television, GPS, sun roof, windows, seat  
6 positioning, cellular telephone, fuel gauge, oil level  
7 gauge, tire pressure gauge, engine temperature gauge, brake  
8 temperature gauge, window-washer fluid gauge and  
9 headlights.

1 46. A method according to claim 44 wherein modifying the  
2 graphic composition of the display comprises adding a  
3 graphic user interface element to the dashboard display.

1 47. A method according to claim 44 wherein modifying the  
2 graphic composition of the display comprises removing a  
3 graphic user interface element from the dashboard display.

1 48. A method according to claim 44 wherein modifying the  
2 graphic composition of the display comprises changing the  
3 position of a graphic user interface element on the  
4 dashboard display.

1 49. A method according to claim 44 wherein modifying the  
2 graphic composition of the display comprises changing the  
3 size of a graphic user interface element on the dashboard  
4 display.

1 50. A method according to claim 44 wherein said event  
2 associated with the vehicle comprises a control signal  
3 input by a driver of the vehicle.

1 51. A method according to claim 50 wherein said control  
2 signal comprises a vocal input.

1 52. A method according to claim 50 wherein inputting said  
2 control signal comprises selecting an image, icon or button  
3 on the dashboard display, or selecting an item from a  
4 pull-down menu on the dashboard display.

1 53. A method according to claim 50 wherein inputting said  
2 control signal comprises manipulating a selecting device  
3 mounted upon steering apparatus of the vehicle.

1 54. A method according to claim 53 wherein said selecting  
2 device comprises a pointing device.

1 55. A method according to claim 54 wherein said pointing  
2 device is selected from the group consisting of a joystick,  
3 a thumb-button, track-point, and pressure sensitive  
4 hand-grips.

1 56. A method according to claim 54 wherein said selecting  
2 device also comprises clickable buttons located upon said  
3 steering apparatus.

1 57. A method according to claim 54 wherein said selecting  
2 device also comprises clickable buttons located upon said  
3 pointing device.

1       58. A method according to claim 53 wherein inputting said  
2 control signal does not require the driver removing a hand  
3 from the steering apparatus.

1       59. A method according to claim 50 wherein said control  
2 signal is selected from the group consisting of a request  
3 to initiate a telephone call, a request to change the  
4 internal temperature of the vehicle, a request to utilize  
5 the GPA, a request to adjust the audio equipment.

1       60. A method according to claim 44 wherein said event  
2 associated with the vehicle comprises an input received  
3 from a gauge of vehicle performance.

1       61. A method according to claim 60 wherein said gauge of  
2 vehicle performance comprises a gauge selected from the  
3 group consisting of speedometer, tachometer, fuel gauge,  
4 oil level gauge, tire pressure gauge, engine temperature  
5 gauge, brake temperature gauge, window-washer fluid gauge.

1       62. A method according to claim 44 wherein said event  
2 associated with the vehicle comprises an input received  
3 from a monitor of a status of vehicle components.

1       63. A method according to claim 62 wherein said monitor of  
2 vehicle components monitors the status of a component  
3 selected from the group consisting of sun roof, windows,  
4 seat, internal rear-view mirror, external mirror, steering  
5 column, seat belt, door and headlight.

1       64. A method according to claim 44 wherein said event  
2 associated with the vehicle comprises an input received  
3 from an auxiliary device in the vehicle.  
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1       65. A method according to claim 64 wherein said auxiliary  
2 device is selected from the group consisting of audio  
3 equipment, air conditioner, Internet browser, television,

4 e-mail terminal, GPS, cellular telephone, travel log, pager  
5 and PDA.

1 66. A method according to claim 44 wherein said event  
2 associated with the vehicle comprises receipt of an  
3 external electronic signal.

1 67. A method according to claim 66 wherein said external  
2 electronic signal comprises a signal associated with an  
3 incoming telephone call, receipt of an e-mail message, or  
4 receipt of a traffic alert.

1 68. A method according to claim 44 wherein displaying the  
2 graphic user interface elements comprises personally  
3 configuring the dashboard display for an individual driver.

1 69. A method according to claim 68 wherein personally  
2 configuring comprises configuring the graphic user  
3 interface elements responsive to an input of driver  
4 preferences regarding the graphic composition of the  
5 dashboard display.

1 70. A method according to claim 68 wherein personally  
2 configuring comprises configuring the graphic user  
3 interface elements responsive to an input of driver  
4 preferences relating to operation of the dashboard display.

1 71. A method according to claim 68 wherein personally  
2 configuring comprises configuring the graphic user  
3 interface elements responsive to an input of driver  
4 preferences relating to operation of at least one device in  
5 the vehicle.

1 72. A method according to claim 68 wherein said inputting  
2 driver preferences occurs at a remote location from the  
3 vehicle.

1 73. A display system according to claim 68 wherein said  
2 input of driver preferences occurs within the vehicle.

1 74. A method according to claim 73 wherein said input of  
2 driver preferences occurs while driving.  
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1 75. A method according to claim 73 wherein personally  
2 configuring comprises learning driver preferences while  
3 driving.

1 76. A method according to claim 44 modifying the graphic  
2 configuration comprises blocking some configurations of the  
3 graphic composition of the dashboard display while the  
4 vehicle is moving.

1 77. A method for controlling a dashboard display of a  
2 vehicle comprising manipulating a pointing device located  
3 upon the steering apparatus of said vehicle.

1 78. A method according to claim 77 wherein said pointing  
2 device comprises a joystick.

1 79. A method according to claim 77 and also comprising  
2 manipulating clickable buttons located upon said steering  
3 apparatus.

1 80. A method according to claim 77 and also comprising  
2 manipulating clickable buttons located upon said pointing  
3 device.

1 81. A method according to claim 77 and also comprising:  
2 receiving signals from in-vehicle devices;  
3 displaying graphic user interface elements in a  
4 predetermined graphic composition on the dashboard display  
5 so as to provide information to a driver of the vehicle  
6 regarding operation of at least one of the in-vehicle  
7 devices; and

8        modifying the graphic composition of the dashboard  
9 display responsive to the manipulation of said pointing  
10 device.